

Marlatt G. A., Demming B & Reid J B. Loss of control drinking in alcoholics: an experimental analogue. *J. Abnormal Psychol.* 81:233-41, 1973.
[University of Wisconsin, Madison, WI]

Nonabstinent alcoholics and social drinkers were given either alcoholic (vodka and tonic) or nonalcoholic beverages (tonic only) in a taste-rating task. In each condition, half the subjects expected to drink alcohol and half tonic. Consumption increased only when subjects expected alcohol, regardless of actual beverage content. [The *Social Sciences Citation Index*³ (SSCI³) indicates that this paper has been cited in over 130 publications since 1973.]

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According to the disease model of alcoholism first proposed by Jellinek,¹ loss of control drinking (the apparent inability to voluntarily control drinking after consuming any alcohol) is considered a prime symptom of "gamma-type" (e.g., binge drinking) alcoholism. Adherents of the disease model posit that the alcoholic's ingestion of any alcohol activates an underlying addictive craving for more alcohol that is impossible to resist. According to this approach, it is impossible for alcoholics to ever control their drinking.²

An alternative hypothesis, posed by behavioral psychologists, is that excessive consumption is determined by external reinforcement contingencies. Alcohol provides a powerful reward: it provides both positive (euphoric high) and negative (escape from stress) reinforcement. Perhaps the high rate of drinking in alcoholics is mediated more by the psychological expectancy of reinforcement (possibly mediated by classical conditioning) than by the physiological effects of alcohol.

While we were assistant professors of psychology at the University of Wisconsin in 1971, John Reid and I planned a study to test these alternative hypotheses. Barbara Demming was the experimenter as part of her

master's research. To separate the psychological effects of alcohol from the expectancy factors, we decided to use a placebo design. We soon discovered a major flaw in the standard "double-blind" placebo design. Although it successfully controls for experimenter bias, this design does not provide an adequate control for subject expectancies. Since the subject expects to receive the "real drug" in both the drug and placebo conditions, there is no way to assess the effects of the drug alone, in the absence of expecting to receive it. To remedy this, we added a "reverse placebo" condition in which alcohol is given when the subject expects to receive a nonalcoholic beverage. This yields a four-group design (2 x 2 factorial): expect alcohol/receive alcohol, expect alcohol/receive placebo, expect placebo/receive alcohol, and expect placebo/receive placebo. As we later discovered, a similar design had been described in the literature,³ but had yet to be applied using alcohol as the active drug. Our design, now known as the "balanced placebo design,"⁴ is one reason that the article has been frequently cited.

We spent many a pleasant evening experimenting with different alcoholic beverages until we came up with a combination that would work for our study. When served chilled vodka and tonic (1:5 ratio), our pilot subjects could not detect the presence or absence of vodka on better than a chance basis. In the actual study, subjects were led to believe that they would be sampling either vodka and tonic or tonic water only in a taste-rating task. The results showed that for both alcoholics and social drinkers, subjects who expected to sample a drink containing alcohol drank almost twice as much beverage as those who expected to receive only tonic, regardless of the actual presence or absence of vodka in the drink. The findings provided a challenge to the disease-model theory of loss of control and opened the door to cognitive-behavioral treatment programs for alcoholism designed to modify expectancies and to teach behavioral coping skills to prevent relapse.^{5,6}

1. Jellinek E M. *The disease concept of alcoholism*. New Haven, CT: Hillhouse Press, 1960. 246 p. (Cited 645 times.)
2. Marlatt G A. The controlled drinking controversy: a commentary. *Amer. Psychol.* 38:1097-110, 1983.
3. Ross S, Krugman A D, Lyerly S B & Clyde D J. Drugs and placebos: a model design. *Psychol. Rep.* 10:383-92, 1962. (Cited 25 times.)
4. Marlatt G A & Rosenow D R. Cognitive processes in alcohol use: expectancy and the balanced placebo design. (Mello N K, ed.) *Advances in substances abuse: behavioral and biological research*. Greenwich, CT: JAI Press, 1980. Vol. 1, p. 159-99.
5. Chaney E F, O'Leary M R & Marlatt G A. Still training with alcoholics. *J. Consult. Clin. Psychol.* 46:1092-104, 1978. (Cited 60 times.)
6. Marlatt G A & Gordon J R, eds. *Relapse prevention: maintenance strategies in the treatment of addictive behaviors*. New York: Guilford Press, 1985.